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09/747,464	12/22/2000	Kirk Ouellette	SMB 2 0913	9818

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James W. McKEE
FAY, SHARPE, FAGAN
MINNICH & McKEE, LLP
1100 Superior Avenue, 7th Floor
Cleveland, OH 44114-2518

EXAMINER

SHAPIRO, LEONID

ART UNIT	PAPER NUMBER
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2673

12

DATE MAILED: 02/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/747,464

Applicant(s)

OUELLETTE ET AL.

Examiner

Leonid Shapiro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-6, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bock et al. (US Patent No. 6,417,868 B1) in view of in view of Borel et al. (US Patent No. 6,252,613 B1) and Bock et al. (US 6271820 B1).

As to claim 1, Bock et al. ('868) teaches the method of driving a passive matrix display having a plurality of addressable rows and a plurality of columns to which successive frames of video data is applied and which intersects rows to form a plurality of sub-pixels which when grouped together into sets to form a pixel (See Fig. 3, items 41-49, in description See Col. 4, Lines 5-10), the improvement comprising simultaneously addressing successive pairs of rows for selecting distinct sets of a fixed number of sub-pixels forming pixel from a superset of sub-pixels surrounding pixel for each of a set of sub-frames within a frame of video data (See Fig. 3, items 41-49, in description See Col. 4, Lines 5-36 and Col. 2, Lines 18-25).

Bock et al. ("868) does not show applying video data to each sets of sub-pixels in a such manner that the time average of the video data over the frame of video data is in accordance with a video image to be displayed for the frame.

Bock et al. ("868) teaches divide pixel in subpixels and applying video data to each sets of sub-pixels in a such manner that the time average of the video data over the frame of video

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data is in accordance with a video image to be displayed for the frame (See Col. 4, Lines 1-4 and Col. 2, Lines 10-15) and preserve or reduce resolution (See Col. 4, Lines 5-10).

It would have been obvious to one ordinary skill in the art at the time of invention that the time average of the video data over the frame of video data is in accordance with video image to be displayed for the frame, in order to preserve resolution the display has to be subdivided into more subpixels (See Col. 2, Lines 10-15 in Bock et al. reference).

Bock et al. ("868) does not show distinct sets contains different subpixels.

Borel et al. teaches distinct sets containing different subpixels for addressing even and odd rows (See Fig. 4, items 21,23,54, in description See Col. 6, Lines 43-48 and Col. 7, Lines 4-26).

It would have been obvious to one ordinary skill in the art at the time of invention to implement distinct sets of different subpixels as shown by Borel et al. in the Bock et al. apparatus in order to enable a combination of subpixels to be selected making it possible to obtain a better compromise between the vertical and horizontal resolution whatever the type of screen used (See Col. 2, Lines 9-12 in Borel et al. reference).

Bock et al. ("868) and Borel et al. do not teach a set of at least three sub-frames within a frame of video data.

Bock et al. ("820) teaches to divide each frame into three separately addressable sub-frames (See Fig. 1, items 1, 9, N, Col. 9, Lines 9-14).

It would have been obvious to one ordinary skill in the art at the time of invention to implement a set of at least three sub-frames within a frame of video data as shown by Bock et al. ("820) in the Bock et al. ("868) and Borel et al. apparatus in order to provide and addressing

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scheme which is capable of producing a large number of gray levels (See Col. 2, Lines 9-12 in Bock et al. ("820) reference).

As to claim 2, Bock ("868) teaches two sets of six pixels, each defined by the intersection of three fixed adjacent columns (See Fig. 3, items 51-53, in description See Col. 4, Lines 37-46) and two selected adjacent rows (See Fig. 3, items 61-62, in description See Col. 4, Lines 9-10).

Bock ("868) does not show rows are selected according to a progressive format.

Since LCD usually driven using progressive format and Bock et al. does not show provisions for driving even and odd lines separately, as required by interlaced format, it would have been obvious to one ordinary skill in the art at the time of invention that progressive format used in Bock et al. apparatus in order to preserve resolution the display has to be subdivided into more subpixels (See Col. 2, Lines 10-15 in Bock et al. reference).

As to claim 3, Bock et al. ("868) does not show two sets of six sub-pixels, each defined by the intersection of three fixed adjacent columns and two selected adjacent rows and wherein rows are selected according to an interlaced format such that rows are alternately grouped into odd and even sets.

Borel et al. teaches two sets of six sub-pixels, each defined by the intersection of three fixed adjacent columns and two selected adjacent rows (See Fig. 4, items 9, 21, 23, 54, Li, Li +1, in description See Col. 7, Lines 4-26 and Col. 6, Lines 44-48) and wherein rows are selected according to an interlaced format such that rows are alternately grouped into odd and even sets (See Fig. 4, items 9, 21, 23, 54, Li, Li+1, in description See Col. 7, Lines 4-26 and Col. 6, Lines 44-48).

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It would have been obvious to one ordinary skill in the art at the time of invention to use Borel et al. approach in the Bock et al. ("868) apparatus and method in order to use of an algorithm for adapting the screen to a source of interlaced images (See Col. 1, Lines 37-38 in the Borel et al. reference).

As to claim 4, Bock et al. ("868) does not teach three sets of three sub-pixels arranged as sub-pixel triads spanning two rows selected from a superset of five adjacent sub-pixels wherein each set has a common sub-pixel (See Fig. 9, Items 47, 49, 68, in description See Col. 9, Lines 28-57).

It would have been obvious to one ordinary skill in the art at the time of invention to use Borel et al. approach in the Bock et al. apparatus in order to use second pixel common to odd video row 47 (See Col. 9, Lines 39-40 in the Borel et al. reference).

As to claims 5, 9 Bock et al. ("868) does not teach each set of sub-pixels consist of two red, two green and two blue sub-pixels for a full color display.

Borel et al. teaches each set of sub-pixels consist of two red, two green and two blue sub-pixels for a full color display (See Fig. 4, item 9, in description See Col. 7, Lines 4-26).

It would have been obvious to one ordinary skill in the art at the time of invention to use Borel et al. approach in the Bock et al. ("868) apparatus and method in order to use of an algorithm for adapting the screen to a source of interlaced images (See Col. 1, Lines 37-38 in the Borel et al. reference).

As to claim 6, Borel et al. teaches set of three sub-pixels consists of a red, green and blue subpixel for a full color display (See Fig. 9, item 20, in description See Col. 9, Lines 28-57).

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2. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bock et al. (US Patent No. 6,417,868 B1) in view of in view of Borel et al. (US Patent No. 6,252,613 B1).

As to claim 7, Bock et al. ('868) teaches the method of driving a passive matrix display having a plurality of addressable rows and a plurality of columns to which successive frames of video data is applied and which intersects rows to form a plurality of sub-pixels which when grouped together into sets to form a pixel (See Fig. 3, items 41-49, in description See Col. 4, Lines 5-10), the improvement comprising simultaneously addressing successive pairs of rows for selecting distinct sets of a fixed number of sub-pixels forming pixel from a superset of sub-pixels surrounding pixel for each of a set of sub-frames within a frame of video data (See Fig. 3, items 41-49, in description See Col. 4, Lines 5-36 and Col. 2, Lines 18-25).

Bock et al. ('868) does not show applying video data to each sets of sub-pixels in a such manner that the time average of the video data over the frame of video data is in accordance with a video image to be displayed for the frame.

Bock et al. ('868) teaches divide pixel in subpixels and applying video data to each sets of sub-pixels in a such manner that the time average of the video data over the frame of video data is in accordance with a video image to be displayed for the frame (See Col. 4, Lines 1-4 and Col. 2, Lines 10-15) and preserve or reduce resolution (See Col. 4, Lines 5-10).

It would have been obvious to one ordinary skill in the art at the time of invention that the time average of the video data over the frame of video data is in accordance with video image to be displayed for the frame, in order to preserve resolution the display has to be subdivided into more subpixels (See Col. 2, Lines 10-15 in Bock et al. reference).

Bock et al. ("868) does not show distinct sets contains different six sets of three sub-pixels arranged as sub-pixel triads spanning two rows selected from a superset of seven adjacent sub-pixels spanning three rows wherein each set has a common sub-pixel.

Borel et al. teaches distinct sets contains different six sets of three sub-pixels arranged as sub-pixel triads spanning two rows selected from a superset of six adjacent sub-pixels spanning two rows wherein each set has a common sub-pixel (See Fig. 4, items 21,23,54, in description See Col. 6, Lines 43-48 and Col. 7, Lines 4-26).

It would have been obvious to one ordinary skill in the art at the time of invention to implement distinct sets of different subpixels as shown by Borel et al. in the Bock et al. apparatus in order to enable a combination of subpixels to be selected making it possible to obtain a better compromise between the vertical and horizontal resolution whatever the type of screen used (See Col. 2, Lines 9-12 in Borel et al. reference).

As to claim 8, Bock et al. does not teach each set of sub-pixels consist of two red, two green and two blue sub-pixels for a full color display.

Borel et al. teaches each set of sub-pixels consist of two red, two green and two blue sub-pixels for a full color display (See Fig. 4, item 9, in description See Col. 7, Lines 4-26).

It would have been obvious to one ordinary skill in the art at the time of invention to use Borel et al. approach in the Bock et al. apparatus and method in order to use of an algorithm for adapting the screen to a source of interlaced images (See Col. 1, Lines 37-38 in the Borel et al. reference).

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Response to Amendment

2. Applicant's arguments filed on 09-12-03 with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

The Towler et al. (US Patent No. 6,104,365) reference discloses light modulating device with three sub-frames within one frame.

Telephone inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 703-305-5661. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'Vijay Shankar', written in a cursive style.

**VIJAY SHANKAR
PRIMARY EXAMINER**